SC #19 12/15/03

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	Alan J. DEMERS et al.		
Application No.:	09/321,594	Group Art Unit:	2176
Filed:	May 28, 1999	Examiner:	Romero, A.
Attorney Docket:	50277-0313		
Client Docket:	OID-1999-059-01		

For: SCHEMA EVOLUTION IN REPLICATION

APPEAL BRIEF

Honorable Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

This Appeal Brief is submitted, in triplicate, in support of the Notice of Appeal filed October 2, 2003.

I. REAL PARTY IN INTEREST

Oracle International Corp. is the real party in interest.

II. RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any related appeals and interferences.

III. STATUS OF THE CLAIMS

Claims 1-11 and 14-15 are pending in this appeal, in which claims 12-13 have earlier been canceled as directed to a separate invention. No claim is allowed. This appeal is therefore taken from the final rejection of claims 1-11 and 14-15 on July 2, 2003.

IV. STATUS OF AMENDMENTS

No amendment to the claims has been filed after final rejection.

V. SUMMARY OF THE INVENTION

The present invention addresses problems associated with replicating portions of a database base when the database objects are changing over time particularly when new columns are added or old columns are dropped (p. 1, lines 5-12). Prior to the present invention, before any of these and other administrative operations to a particular database object are performed at one site, any activities requiring replication for that database object must be suspended, or "quiesced," at all other sites to allow previously made replication activities to complete and maintain data consistency (p. 1, lines 11-18).

In large-scale distributed database systems with many master sites, moreover, quiescence of every master site at the same time is often awkward or impractical (p. 2, lines 23-24), and practical support for such administrative changes is much more difficult when the distributed database system includes disconnected sites, such as laptop computers loaded with applications and a data store (p. 3, lines 4-9). Thus, in front office automation deployments, these databases are not connected for very long periods of time, and it is exceedingly rare that that all of them are connected at the same time (p. 3, lines 13-16). Consequently, quiescence for such deployments is an extremely difficult, if not impossible, administrative task to perform (p. 3, lines 16-17).

This and other needs are addressed by the present invention by allowing replication to occur even though certain administrative changes, such as adding a column, have been applied to database objects at only some of the sites (p. 4, lines 2-6). For example with reference to p. 4, line 25, through p. 5, line 2, and FIG. 6, one embodiment relates to a method of propagating changes to a table, in which a first copy 612 of the table is maintained at a first site 600 and a second copy 632 of the table is maintained at a second site 620. The first copy 612 of the table and the second copy 632 of the table have at least one non-overlapping column A-R. Thus, changes to the first copy of the table are transmitted from the first site to the second site, and the second copy of the table is updated at the second site based on the transmitted changes (step 320 in FIG. 3(a) and page 13, lines 16-23).

VI. ISSUES

Whether claims 1-11 and 14-15 are obvious under 35 U.S.C. § 103 based on *Zollinger et al.*?

VII. GROUPING OF CLAIMS

The claims should not be regarded as all standing together since the claims recite respective limitations that render each of the claims separately patentable. For the purposes of this appeal, the following groups are recognized:

A. Claims 1-4

B. Claims 5-6

C. Claim 7

D. Claim 9

E. Claim 10

F. Claim 11

G. Claim 14

H. Claim 15

VIII. ARGUMENT

A. DEPENDENT CLAIMS 14-15 ARE PATENTABLE OVER *ZOLLINGER ET AL.* BECAUSE *ZOLLINGER ET AL.* FAILS TO TEACH THAT THE FIRST AND SECOND COPIES HAVE AT LEAST ONE NON-OVERLAPPING COLUMN OR DATA FIELD AFTER UPDATING THE SECOND COPY.

The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention under any statutory provision always rests upon the Examiner. *In re Mayne*, 41 USPQ2d 1451 (Fed .Cir. 1997); *In re Deuel*, 34 USPQ2d 1210 (Fed. Cir. 1995); *In re Bell*, 26 USPQ2d 1529 (Fed. Cir. 1993); *In re Oetiker*, 24 USPQ2d 1443 (Fed. Cir. 1992). In rejecting a claim under 35 U.S.C. § 103, the Examiner is required to provide a factual basis to support the obviousness conclusion. *In re Warner*, 154 USPQ 173 (CCPA 1967); *In re Lunsford*, 148 USPQ 721 (CCPA 1966); *In re Freed*, 165 USPQ 570 (CCPA 1970). The Examiner is required to show that all the claim limitations are taught or suggested by the references. *In re Royka*, 180 USPQ 580 (CCPA 1974); *In re Wilson*, 165 USPQ 494 (CCPA 1970).

The rejection of dependent claims 14-15, however, should be reversed because *Zollinger et al.* fails to the teach or suggest the limitations of the claims. For example, dependent claim 14 recites:

> wherein the first copy of the table and the second copy of the table have said at least one non-overlapping relational database column **after said updating**

Dependent claim 15 recites:

wherein the first copy of the data container and the second copy of the data container have said at least one non-overlapping data field **after said updating**

The antecedent basis for "said updating" in dependent claims 14-15 is "updating the second copy . . . at the second site based on the transmitted changes" in independent claims 1 and 11, respectively. Claims 14-15 thus require that the first and second copies have at least one non-overlapping column or data field after updating the second copy. *Zollinger et al.*, however, does not teach this feature, which the Examiner has correctly and repeatedly acknowledged by stating that "Zollinger does not explicitly disclose 'non-overlapping column'" (Advisory Action of September 24, 2003, p. 2; see also Final Office Action of July 2, 2003, p. 3, and Non-Final Office Action of February 27, 2003, p. 4). In fact, *Zollinger et al.* teaches against having at least one non-overlapping column or data field, and the Examiner's inference to the contrary is not supported in the record.

Zollinger et al. is directed to distributing database differences corresponding to database change events made to database table located on a server computer (Title). With respect to step **78** of FIG. 5 and col. 10:16-27, *Zollinger et al.* enforces a distinction between a "minor revision" and a "major revision," in which database changes events are handled very differently. Specifically, minor revisions are handled by generating differences between the current table and the reference table (FIG. 5, step **82**, col. 10:35-67). Major revisions, on the other hand, are handled, not by transmitting "changes to a first copy of the table," but by copying the entire table (step **90**).

Thus, *Zollinger et al.* discloses a system in which server and client tables must be the same, including the same column shape, after every update. Specifically, with respect to adding a column, *Zollinger et al.* discloses that adding an entire column is considered a "major structural change" to a table (col. 11:14-17):

> The differences in the table state from a state shown in FIG. **2C** to that shown in FIG. **2D** is a major structural change to the table. Namely, an entire column for the title of the employee is added.

When a column is added to a server table, *Zollinger et al.* discloses that the table is copied down to the client. Specifically, *Zollinger et al.* discloses on col. 11:40-50 as follows:

> Next, the current table **20** is copied to the reference table **28** at step **90** without any differencing being made. Finally, all previous updates will no longer be necessary since every update to this newest version level will require that the table be copied to the client in its entirety. Therefore, at step **92**, all previous updates will be erased in order to release system resources. The effect of a major revision when receiving a request for an update is that the reference table **28** will be directly copied to the client regardless of the current version of the table on the client.

This copying to effect a major revision results in the server and client tables having identical columns. This result is true even for the non-enabled alternative of "storing an update" to add the column at the client rather than copying the entire table down to the client (col. 11:26-29). As a result, *Zollinger et al.* fails to teach or suggest, and in fact teaches against "at least one non-overlapping relational database column [or 'data field'] after said updating" (claims 14-15). Even if the Examiner were to find a reference that clearly should what the Examiner admits that *Zollinger et al.* does not explicitly disclose, it is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 218 USPQ 769 (Fed. Cir. 1983). A prior art reference must be considered in this entirety including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984).

The final Office Action, states on page 9 that "figures 2A and 2D show the differences after update from the addition of a new column in figure 2D (non-overlapping columns between tables)." However, Figures 2A and 2D merely show the difference between two versions of a server table (col. 9:15-18), not between a first copy at a first site and a second copy at a second

site. With respect to the client copy, *Zollinger et al.* discloses that "the current table **20** (FIG. 2B) is copied to the reference table **28** (now also FIG. 2B)" (Col. 10: 60-62), showing that the client copy is always the same as the server copy after an update. As a result, *Zollinger et al.* does not teach that its server copy and client copy have "at least one non-overlapping data field [or 'relational database column'] after said updating."

The Advisory Action's reasoning that "Zollinger ... teaches an entire column can be added to a database table changing the structure of the database table, in order words, one table an have the added column and the second table will need to be updated with the added column (see Figure 2A-2D)" is beside the point: claims 14-15 recite "after said updating" whose antecedent basis is "updating the second copy . . . at the second site based on the transmitted changes." After the *Zollinger et al.*'s second table is updated, *Zollinger et al.*'s second table does not have a non-overlapping column.

Accordingly, the reversal of the rejection of claims 14-15 is respectfully requested.

B. CLAIMS 1-8 AND 14 ARE NOT RENDERED OBVIOUS BY *ZOLLINGER ET AL.* BECAUSE *ZOLLINGER ET AL.* FAILS TO TEACH "TRANSMITTING CHANGES TO THE FIRST COPY OF THE TABLE," WHICH HAS "AT LEAST ONE NON-OVERLAPPING RELATIONAL DATABASE COLUMN" WITH A SECOND COPY OF THE TABLE.

Zollinger et al. does not teach or otherwise suggests the limitations of claims 1-8 and 14, whose independent claim 1 recites:

> **transmitting changes to the first copy of the table** from the first site to the second site; and
> updating the second copy of the table at the second site based on the transmitted changes;
> wherein the first copy of the table and the second copy of the table have at least one **non-overlapping relational database column**

As argued above, *Zollinger et al.* discloses a system in which the client and server table are identical copies after every update. More specifically, *Zollinger et al.* states that "since every update to [the] newest version level will require that the table be copied to the client in its entirety" (col. 11:42-43; step **90**, FIG. **5**), "all previous updates will be erased" (col. 11:45; step **92**, FIG. **5**) and updates are allowed to resume only after the client table has a copy of the server table (branch from step **92** to step **74** in FIG. 5).

On page 10, however, the Final Office Action states that "*Zollinger et al.* discloses adding a column in a table, changing the structure of the table, in other words, a new column is being inserted into the table without overlapping other columns," apparently construing the recited "changes" to be the insertion of a new column, such as the title column in FIG. **2D** (col. 11:15-18). If, however, "the changes to the first copy" is construed to read on adding a new column (title) to the server table, then the first copy of the table is the server table before the column is added (otherwise there is no "change") and therefore does not include the new column. Well-settled case law holds that the words of a claim must be read as they would be interpreted by those of ordinary skill in the art. *In re Baker Hughes Inc.*, 215 F.3d 1297, 55 USPQ2d 1149 (Fed. Cir. 2000); *In re Morris*, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); M.P.E.P. 2111.01. "Although the PTO must give claims their broadest reasonable interpretation, this interpretation must be consistent with the one that those skilled in the art would reach." *In re Cortright,* 165 F.3d 1353, 1369, 49 USPQ2d 1464, 1465 (Fed. Cir. 1999).

As a result, *Zollinger et al.* does not disclose "wherein the first copy of the table and the second copy of the table have at least one non-overlapping relational database column," because the first copy and the second copy both lack the new column before the change, and there exists no "non-overlapping relational database column" as recited in claims 1.

Accordingly, the Honorable Board is respectfully requested to reverse the rejection of claims 1-8 and 14.

C. CLAIMS 11 AND 15 ARE NON-OBVIOUS BY *ZOLLINGER ET AL.* BECAUSE *ZOLLINGER ET AL.* FAILS TO TEACH "TRANSMITTING CHANGES TO THE FIRST COPY OF THE DATA CONTAINER," WHICH HAS "AT LEAST ONE NON-OVERLAPPING DATA FIELD" WITH A SECOND COPY OF THE TABLE.

Zollinger et al. is also deficient with respect to independent claim 11 and its dependent claim 15. Independent claim 11 recites:

> **transmitting changes to the first copy of the data container** from the first site to the second site; and
> updating the second copy of the data container at the second site based on the transmitted changes;
> wherein the first copy of the data container and the second copy of the data container have at least one **non-overlapping data field.**

Zollinger et al. does not disclose "transmitting changes to the first copy of the data container" and "updating the second copy of the data container," "wherein the first copy of the data container and the second copy of the data container have at least one non-overlapping data field" because, prior to insertion of the column Title in FIG. 2D ("the change to the first copy"), the first copy and the second copy did not have at least one non-overlapping data field; they were identical. Even if the data field were to be broadly construed by the Examiner to be a new row with "Mr. Mauss" as floated in the Final Office Action on page 10, the new row is the change, but the server table does not yet contain the "Mr. Mauss" row and is there identical to the client copy.

Accordingly, the Honorable Board is respectfully requested to reverse the rejection of claims 11 and 15.

D. CLAIMS 9-10 ARE NOT RENDERED OBVIOUS BY *ZOLLINGER ET AL.* BECAUSE *ZOLLINGER ET AL.* FAILS TO TEACH "MAINTAINING REPLICATION ACTIVITIES" WHILE "DROPPING THE FIRST COLUMN AND ADDING THE SECOND COLUMN."

Reversal of the rejection of claims 9-10 is also requested, since *Zollinger et al.* fails to suggest the features of claims 9-10. For example, independent claim 9 sets forth:

> (d) dropping the first column and adding the second column to the table at the second site;
> (e) defining the second flavor for the first site and dropping the first column from the table at the first site; and
> (f) maintaining replication activities while performing steps (a), (b), (c), (d), and (e).

Zollinger et al. discloses a system in which the client and server table are identical copies after every update and that major revisions stop replication activities. More specifically, *Zollinger et al.* states that "since every update to [the] newest version level will require that the table be copied to the client in its entirety" (col. 11:42-43; step **90**, FIG. **5**), "all previous updates will be erased" (col. 11:45; step **92**, FIG. **5**) and updates are allowed to resume only after the client table has a copy of the server table (branch from step **92** to step **74** in FIG. 5). Thus, *Zollinger et al.* fails to teach or other suggest step (f) of claims 9-10.

The Examiner (Final Office Action, p. 11) contends that "*Zollinger* discloses changing the state of a database, such as additions, deletions, or modifications of records. When synchronizing between database tables it is not limited to only delete rows; wherein if columns can be added into a table to synchronize with the current table; a deletion (dropping) of columns can also be done." This comment, however, does not touch on whether replication activities are maintained or suspended in *Zollinger et al.* during certain operations. As for changes in column shape, *Zollinger et al.* teaches against this or any other major structure change while "maintaining replication activities" as recited in claim 9. Rather, *Zollinger et al.* discloses that when a new column is added, "the current table is copied to the reference table," and then "all previous

updates will no longer be necessary" (col. 11:41-44), so "all previous updates will be erased in order to release system resources" (col. 10:44-46). Replication activities are not maintained at all: replications are erased when adding in a column in *Zollinger et al.*

The citations in the Office Action do not support the rejection. Although FIGS. **2A** and **2B**, cited in the Office Action, do show differences from the deletion of the Presley row after updating, these differences are row changes not column changes. No column is added or changed between FIGS. **2A** and **2B**. Thus, the Examiner's citations in support of the rejection is irrelevant to the claim language, which recites "column."

E. CLAIMS 5-7 ARE PATENTABLE OVER *ZOLLINGER ET AL.* BECAUSE *ZOLLINGER ET AL.* HAS NO TEACHING OF "DEFINING A TOP FLAVOR DESCRIBING OVERLAPPING RELATIONAL DATABASE COLUMNS AND NON-OVERLAPPING RELATIONAL DATABASE COLUMNS OF THE TABLE."

The rejection of dependent claims 5-7 over *Zollinger et al.* is also deficient, since *Zollinger et al.* lacks any teaching of "defining a top flavor describing overlapping relational database columns and non-overlapping relational database columns of the table." *Zollinger et al.*'s client and server tables are to maintain the same column shape and thus there is no need in *Zollinger et al.* to define a flavor that describes "non-overlapping columns."

The portion of *Zollinger et al.* cited by the Examiner, however, merely refers to way of batching updates into "supersets or collections of other updates" (col. 6:37). However, changes in the column shape are considered in *Zollinger et al.* to be major structural change, which means that "the current table is copied to the reference table," and then "all previous updates will no longer be necessary" (col. 11:41-44), so "all previous updates will be erased in order to release system resources" (col. 10:44-46). This aspect of *Zollinger et al.* means that the supersets of updates do not describe overlapping and non-overlapping relational database columns.

Accordingly, the rejection of dependent claims 5-7 lack the requisite factual basis and should be reversed.

F. CLAIMS 7 AND 10 ARE NOT RENDERED OBVIOUS BY *ZOLLINGER ET AL.* BECAUSE *ZOLLINGER ET AL.* DOES NOT TEACH "MAINTAINING REPLICATION ACTIVITIES" WHILE "DROPPING THE FIRST COLUMN AND ADDING THE SECOND COLUMN."

Claim 7 recites "wherein the step of updating the second copy of the table at the second site based on the transmitted changes includes the step of updating **overlapping columns** between the first flavor and the second flavor in the second copy of the table." Claim 10 recites "updating the second copy of the table at the second site based on **overlapping columns** between the first flavor and the second flavor."

The Examiner, on p. 5 of the Final Office Action, argued that *Zollinger et al.* "teaches supersets or collections (including second flavor) of the updates of the database tables on the differences of two separate database tables." The logic of this rejection is inconsistent with the rejection of claim 1, since the Examiner also, p. 10, read "changes to the first copy of the table" on adding a column to a database table. If this is true, though, the change includes the new column, and therefore *Zollinger et al.* does not teach that updating "based on the transmitted changes" includes updating **overlapping columns**.

Unless the patent otherwise provides, a claim term cannot be given a different meaning in the various claims of the same patent. *Georgia Pacific Corp. v. U.S. Gypsum Co.*, Nos. 97-1238,-1244 (Fed. Cir., Nov. 1, 1999); see also *Southwall Tech., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1579, 34 USPQ2d 1673, 1679 (Fed. Cir. 1995) (holding that claim term found in different claims must be interpreted consistently); *Fonar Corp. v. Johnson & Johnson*, 821 F.2d 627, 632, 3

USPQ2d 1109, 1113 (Fed. Cir. 1987) (holding that a term used in one claim had the same meaning in another claim).

As a result, the Examiner's very own theory for rejecting claim 1 over *Zollinger et al.* entails that claims 7 and 10 are patentable over *Zollinger et al.*

IX. CONCLUSION AND PRAYER FOR RELIEF

Appellants, therefore, request the Honorable Board to reverse each of the Examiner's rejections.

Respectfully Submitted,

DITTHAVONG & CARLSON, P.C.

12/3/2007
Date

Stephen C. Carlson
Attorney for Applicant(s)
Reg. No. 39929

10507 Braddock Rd, Suite A
Fairfax, VA 22032
Tel. 703-425-8516
Fax. 703-425-8518

APPENDIX

1. (Previously Presented) A method of propagating changes to a table, comprising the steps of:

maintaining a first copy of the table at a first site;

maintaining a second copy of the table at a second site;

transmitting changes to the first copy of the table from the first site to the second site; and

updating the second copy of the table at the second site based on the transmitted changes;

wherein the first copy of the table and the second copy of the table have at least one non-overlapping relational database column.

2. (Previously Presented) The method of claim 1, wherein the non-overlapping relational database column is present in the first copy and missing in the second copy.

3. (Previously Presented) The method of claim 1, wherein the non-overlapping relational database column is missing in the first copy and present in the second copy.

4. (Original) The method of claim 1, further comprising the step of reconciling differences in the column shape of the first copy and the column shape of the second copy for the transmitted changes.

5. (Previously Presented) The method of claim 1, further comprising the step of defining a top flavor describing overlapping relational database columns and non-overlapping relational database columns of the table.

6. (Original) The method of claim 5, further comprising the steps of:

defining a first flavor describing the columns of the first copy; and

transmitting an indicator of the first flavor from the first site to the second site.

7. (Original) The method of claim 5, further comprising the steps of:

defining a second flavor describing the columns of the second copy; and

wherein the step of updating the second copy of the table at the second site based on the transmitted changes includes the step of updating overlapping columns between the first flavor and the second flavor in the second copy of the table.

8. (Original) The method of claim 1, wherein:

the step of maintaining a first copy of the table at a first site includes the step of maintaining an updatable snapshot at a laptop computer site; and

the step of maintaining a second copy of the table at a second site includes the step of maintaining a master table at a master site.

9. (Previously Presented) A method of modifying a table to drop a first column and add a second column, said table being replicated at a plurality of sites, comprising the steps of:

(a) defining a first flavor for a first site, said first flavor describing the table as having both the first column and the second column;

(b) adding the second column to the table at the first site, so that the table contains both the first column and the second column;

(c) defining a second flavor for a second site, said second flavor describing the table as having the second column but not the first column;

(d) dropping the first column and adding the second column to the table at the second site;

(e) defining the second flavor for the first site and dropping the first column from the table at the first site; and

(f) maintaining replication activities while performing steps (a), (b), (c), (d), and (e).

10. (Original) The method of claim 9, wherein the step of maintaining replication activities includes the steps of:

transmitting changes to the table from the first site to the second site; and

updating the second copy of the table at the second site based on overlapping columns between the first flavor and the second flavor.

11. (Previously Presented) A method of propagating changes to a data container, comprising the steps of:

maintaining a first copy of the data container at a first site;

maintaining a second copy of the data container at a second site;

transmitting changes to the first copy of the data container from the first site to the second site; and

updating the second copy of the data container at the second site based on the transmitted changes;

wherein the first copy of the data container and the second copy of the data container have at least one non-overlapping data field.

14. (Previously Presented) The method of claim 1, wherein the first copy of the table and the second copy of the table have said at least one non-overlapping relational database column after said updating.

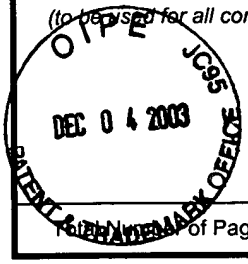
15. (Previously Presented) The method of claim 11, wherein the first copy of the data container and the second copy of the data container have said at least one non-overlapping data field after said updating.

AF/2700

PTO/SB/21 (12-97)
Approved for use through 9/30/00. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paper Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)



Application Number	09/321,594
Filing Date	May 28, 1999
In re Application of:	Alan J. DEMERS et al.
Group Art Unit	2176
Examiner Name	Romero, A.
Attorney Docket Number	50277-0313
Total Number of Pages in This Submission: 17	Client Docket Number: OID-1999-059-01

RECEIVED
DEC 11 2003
Technology Center 2100

ENCLOSURES *(check all that apply)*

- ☒ Fee Transmittal Form
  - ☒ Fee Attached
- ☐ Amendment / Response
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/ Incomplete Application
  - ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Assignment Papers *(for an Application)*
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition Routing Slip (PTO/SB/69) and Accompanying Petition
- ☐ To Convert a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Small Entity Statement
- ☐ Request of Refund
- ☐ After Allowance Communication to Group
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☒ Appeal Communication to Group *(Appeal Notice, Brief, Reply Brief)*
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Additional Enclosure(s) *(please identify below):*

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	DITTHAVONG & CARLSON, P.C. Stephen C. Carlson, Reg. No. 39929
Signature	
Date	December 3, 2003

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Alexandria, VA 22313-1450 on this date:

Type or printed name	Linda V. Wiley		
Signature		Date	December 3, 2003

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

PTO/SB/17 (01-03)
Approved for use through 04/30/2003. OMB 0651-0032
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

FEE TRANSMITTAL for FY 2003

Effective 01/01/2003. Patent fees are subject to annual revision.

☐ Applicant Claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 330.00

Complete if Known	
Application Number	09/321,594
Filing Date	May 28, 1999
First Named Inventor	Demers, et al.
Examiner Name	Romero, A.
Art Unit	2176
Attorney Docket No.	50277-0313

METHOD OF PAYMENT *(check all that apply)*

☐ Check ☒ Credit card ☐ Money Order ☐ Other ☐ None

☐ Deposit Account

Deposit Account Number

Deposit Account Name

The Commissioner is authorized to: *(check all that apply)*

☒ Charge fee(s) indicated below ☐ Credit any overpayments

☐ Charge any additional fee(s) during the pendency of this application

☐ Charge fee(s) indicated below, **except for the filing fee** to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) ($)

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

	Extra Claims		Fee from below		Fee Paid
Total Claims	-20**=	X		=	
Independent Claims	-3**=	X		=	
Multiple Dependent				=	

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	**Reissue independent claims over original patent
1205	18	2205	9	**Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($)

** or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge – late filing fee or oath	
1052	50	2052	25	Surcharge – late provisional filing fee or cover sheet	
1053	130	1053		Non-English specification	
1812	2,520	1812		For filing a request for *ex parte* reexamination	
1804	920*	1804		Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805		Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	330.00
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451		Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive – unavoidable	
1453	1,330	2453	665	Petition to revive – unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460		Petitions to the Commissioner	
1807	50	1807		Processing fee under 37 CFR 1.17(q)	
1806	180	1806		Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR § 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802		Request for expedited examination of a design application	

Other fee (specify)

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($)330.00

SUBMITTED BY

Complete *(if applicable)*

Name (Print/Type)	Stephen C. Carlson	Registration No. (Attorney/Agent)	39929	Telephone	703-425-8516
Signature				Date	December 3, 2003

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 37 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, Washington, DC 20231.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.